

**PROBLEM-OF-THE-DAY: ALGEBRA 1****WEEK:** October 15 to October 19**DAY:** Wednesday

**RISD Objective:** Given a figure (including composite figures) and/or a word problem, students will find the area, applying it as necessary.

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**PROBLEM #41**

**Jake's room is 12 ft by 14 ft. The ceiling is 8 ft high. Jake is painting his room (the walls and ceiling) chartreuse. One pint of paint covers 90 square feet. Ignoring windows and doors, how many pints of paint will Jake need to purchase? If each pint costs \$7.98, how much will he spend on paint? Show your work.**



**MODEL SOLUTION #41**

Since, Jake is painting his room, he needs to figure out the area of each of the four walls and the ceiling.

Left Wall:  $(14)(8) = 112 \text{ ft}^2$ .

Right Wall:  $(14)(8) = 112 \text{ ft}^2$ .

Front Wall:  $(12)(8) = 96 \text{ ft}^2$ .

Back Wall:  $(12)(8) = 96 \text{ ft}^2$ .

Ceiling:  $(14)(12) = 168 \text{ ft}^2$ .

$$112 + 112 + 96 + 96 + 168 = 584 \text{ ft}^2.$$

Now, from the problem we know that

$$1 \text{ pint} = 90 \text{ ft}^2$$

Since the surface area of Jake's room is 584, the next step is to divide 584 by 90.

$$584 \div 90 = 6.5$$

Since stores don't sell quantities less than a pint, Jake needs to buy 7 pints of paint.

Now, to find out how much Jake will spend on painting, multiply price by pints.

$$7.98 \times 7 = 55.86$$

Jake will spent \$55.86 on paint.